

ch.5.3 p.293

PERFECT SQUARE TRINOMIALS

$$ax^2 + bx + c$$

$$a^2 + 2ab + b^2 = (a+b)(a+b)$$

$$25x^2 + 20x + 4 = (5x+2)(5x+2)$$

$$a^2 = 25x^2 \quad a = 5x$$

$$b^2 = 4 \quad b = 2$$

$$5x+2=0$$

$$-2$$

$$-\frac{2}{5}x = -\frac{2}{5}$$

$$2ab = 20x \quad 2 \cdot 5x \cdot 2 = 20x ; \quad \frac{-2}{5} \quad \frac{2}{5} \quad x = -\frac{2}{5}$$

$$a^2 - 2ab + b^2 = (a-b)(a-b)$$

$$x^2 - 10x + 25 = (x-5)(x-5)$$

$$a^2 = x^2$$

$$a = x$$

$$b^2 = 25$$

$$b = 5$$

$$2ab = 10x$$

$$2 \cdot x \cdot 5 = 10x$$

$$x - 5 = 0$$

$$+5 \quad +5$$

$$x = 5$$

$$x_1 = 5$$

$$x_2 = 5$$

$$x_{1,2} = 5$$

$$a^2 - b^2 = (a - b)(a + b)$$

DIFFERENCE OF SQUARES

$$x^2 - 144 = (x - 12)(x + 12)$$

$$a^2 - b^2$$

$$\begin{array}{cc} x - 12 = 0 \\ +12 \quad +12 \end{array}$$

$$x = 12$$

$$a = x$$

$$b = 12$$

$$\begin{array}{cc} x + 12 = 0 \\ -12 \quad -12 \end{array}$$

$$x = -12$$

p. 296

71, 73, 75, 77, 65

71

$$x^2 + 4x + 4 = 0$$

$$x^2 + \underline{4}x + 4 = (x+2)(x+2)$$

$$a^2 + \underline{2ab} + b^2 = (\underline{a+b})(\underline{a+b})$$

$$a^2 = x^2$$

$$a = x$$

$$b^2 = 4$$

$$b = 2$$

$$2ab \stackrel{?}{=} 4x$$

$$2ab = 2 \cdot 2 \cdot x = 4x$$

$$(x+2)(x+2) = 0$$

$$x+2 = 0$$

$$x = -2$$

$$(73) \quad 4x^2 + 1 = 4x$$

$$-4x \quad -4x$$

$$4x^2 - 4x + 1 = (2x - 1)(2x - 1)$$

$$a^2 - 2ab + b^2 = (a - b)(a - b)$$

$$a = 2x$$

$$2ab = 4x$$

$$b = 1$$

$$2ab = 2 \cdot 2x \cdot 1 = 4x$$

$$(2x - 1)(2x - 1) = 0$$

$$2x - 1 = 0$$

$$x = \frac{1}{2}$$

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